



INTERAGENCY AGREEMENT WITH THE WASHINGTON STATE DEPARTMENT OF FISH AND WILDLIFE

Agreement No. IAA 14-143

This Agreement is between the Washington State Department of Fish and Wildlife, referred to as WDFW and the Washington State Department of Natural Resources, referred to as the DNR.

The DNR is under authority of RCW Chapter 43.30 of Washington State, Department of Natural Resources. DNR and WDFW enter into this agreement under Chapter 39.34, Interlocal Cooperation Act.

The purpose of this Agreement is to conduct a forage fish survey along the Washington coast, create a bird and mammal geodatabase, and conduct marine mammal aerial surveys.

Attachment A

STATEMENT OF WORK

Scope of Work

Under this contract, the Washington Department of Fish and Wildlife (WDFW) will: 1) continue its current joint forage fish survey with the Coastal Treaty Tribes along the Washington coast from the mouth of the Columbia River north to Cape Flattery; 2) create and map coastal bird and marine mammal geodatabases; and 3) survey and map coastal distribution and abundance patterns for seals, sea lions and sea otters on the Washington coast (Columbia River to Tatoosh Island) in the spring, summer and fall.

1. Coastal Forage Fish Survey

The contract period is from November 16, 2013, through December 31, 2014. Field sampling will occur at a reduced rate (i.e., 10-25% coverage) during the winter months (November 16, 2013 – January 31, 2014) and at a high rate from February 1 through October 31, 2014. Final sample processing, data entry and analysis, and report writing for the 2012-2013 survey and coordination and sample scheduling for the 2013-2014 survey would also occur during the winter months. Final sample processing, data entry and analysis, and report writing for the 2013-2014 survey would occur in the November-December 2014 timeframe.

A spawning beach survey, standardized in the late 1990s, consists of: 1) collecting pertinent habitat, beach slope, tidal height, and positional data for the site; 2) collecting sediment samples from four evenly spaced locations along a 100-ft transect at a given tidal height; 3) passing the sediment through a fixed set of sieves; 4) agitating the 0.5 mm size fraction of the sample in a washbasin to isolate the least dense elements; and 5) examining the resulting ‘winnowed light fraction’ for egg presence and abundance using a compound microscope. We do not propose to collect samples of adult fish or water, nor do we intend to retain any sediment other than the winnowed light fraction.

Particulars of the survey protocol can be found at:

http://wdfw.wa.gov/conservation/research/projects/marine_beach_spawning/index.html.

Beaches along the Washington outer coast will be surveyed for surf smelt *Hypomesus pretiosus*, night smelt *Spirinchus starksi*, and sand lance *Ammodytes hexapterus* spawn. The specific goals of the study are to: 1) subsample the breadth of the outer coast monthly; 2) identify any forage fish eggs found to the lowest taxonomic level possible; and 3) geo-reference all survey data to provide an easily accessible overview of sampling effort and egg detections to date. The survey will use a comprehensive sampling strategy for the entire outer coast to produce an expected sample size of 90% of potential spawning beaches, with 10% selected for sampling monthly.

Survey results shall be used to develop an occupancy model subject to sufficient spatial

and temporal coverage of potential spawning locations, replicate samples, and sufficient spawn prevalence (i.e., proportion of sites occupied) to allow for informative modeling. An occupancy model can provide robust delineations of spawning seasons and regions based on survey data, and can predict the presence of spawning by those regions.

WDFW will coordinate with the Coastal Treaty Tribes in conducting the field work. Several logistical considerations, including availability of access and sampler safety, will be taken into account during planning. In order to extend our ability to sample as many beaches as possible over a broad seasonal range, we plan to draw on the manpower resources of Tribes, particularly to cover the remote beaches of the northern coast. WDFW will provide training and equipment for staff and sample analysis support with the ultimate goal of conducting at least 500 surveys over as broad a spatial and seasonal scale as possible.

WDFW will also collaborate with the Coastal Treaty Tribes on data summarization, analysis, and report writing. The intent is to conduct the survey for a minimum of two years (2013 and 2014) with the potential need for additional surveys during the third year (2015), depending on the number of positive samples collected. Once a sufficient number of positive samples have been collected, WDFW and the Coastal Treaty Tribes will develop and run an occupancy model to predict the spatial and timing distribution of spawning activity; hopefully, this can occur in the third year (2015).

2. Bird and Mammal Geodatabase

WDFW would use existing data to create or update geodatabases to: 1) display bird nesting colonies; 2) marine mammal haulout sites; 3) sea otter concentration areas; and 4) at-sea abundance of birds and mammals in the winter and in the spring/early summer. This information can inform marine spatial planning efforts by identifying “hotspots” or important places for marine birds and mammals, especially for reproduction and other important life history traits such as mammal haulout sites and otter concentration areas, tracking patterns in spatial use of the marine environment by birds and mammals (e.g., are there places with high use and consistency of use or are the patterns ephemeral), and examining impacts to birds and mammals from oil spills or potential alternative energy siting.

3. Marine Mammal Seasonal Aerial Surveys

This project would provide new coastal distribution and abundance patterns for seals, sea lions and sea otter on the Washington coast (Columbia River to Tatoosh Island) in spring, summer and fall. This information can be used in marine spatial planning to:

- Identify seasonal spatial haulout and rafting use patterns for pinnipeds and sea otters.
- Display pinniped and sea otter spatial use patterns in the marine environment.
- Spatial data can be used for oil spill planning, alternative energy placement and fishery interactions.